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RESEARCH ARTICLE

ROLE OF AGRICULTURE SECTOR IN THE ECONOMIC DEVELOPMENT OF HIMACHAL PRADESH

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ABSTRACT

Agriculture sector in India is of such relevance that it is contributing employment to more than 50 percent of the work force and 17 to 18 percent of the Nation's Gross Domestic Product. It is pertinent to understand that the land available for cultivation is abundant and in a country like India where large majority of the population belongs to middle and low economic class and youth is in search of job avenues, if youth is skillfully involved to initiate and go for adopting innovative agricultural activities, employability can be enhanced. At present, land available for cultivation out of the total land holdings in Himachal Pradesh is 75.3 percent of the total area and 85.9 percent of total area in India. Further, Net Area sown is 11.9 percent of the total cultivable area in the State as compared to 45.8 percent that of the Country. Agriculture sector is contributing nearly 16 percent to the Gross State Domestic Product of Himachal Pradesh. Based upon the criteria of land holding, households, cultivable cropping area, net sown area and irrigation, the research paper endows to examine the role of agriculture sector in the economic development of Himachal Pradesh.

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INTRODUCTION

India has diversity of habitation and land use characteristics. The Country is spread over the total land area of 329 million hectares out of which, gross cropped area is 141 million hectare. The agriculture of the Country is of such relevance that it is contributing employment to more than 50 percent of the work force and 17 to 18 percent of the Nation's Gross Domestic Product. It is pertinent to understand that the land available for cultivation is abundant and in a country like India where large majority of the population belongs to middle and low economic class and youth is in search of job avenues, if youth is skillfully involved to initiate and go for adopting innovative agricultural activities, employability can be enhanced. At present, land available for cultivation out of the total land holdings in Himachal Pradesh is 75.3 percent of the total area and 85.9 percent of total area in India. Further, Net Area sown is 11.9 percent of the total cultivable area in the State as compared to 45.8 percent that of the Country. It is further pertinent to mention that this sector has good chances of yield and earning as it is being facilitated by resources.

In Himachal Pradesh, 20 percent of the net cropped area is equipped with the irrigation facilities and in India, 45 percent of the net cropped area is having irrigation facility. Having such a relevant sector of the national economy, agriculture sector needs to be prioritized in terms of encouraging the usage of technology. The research paper endows to examine the role of agriculture sector in economic development of Himachal Pradesh.

REVIEW OF LITERATURE

Choudhary (2016) has claimed that majority of marginal and small farmers' practice in traditional farming in the state of Himachal is not remunerative. He feels that a manifold increase in the resource-use efficiency in crop production can be obtained through protected cultivation compared to open-field conditions which can help marginal and small farmers by provided them financial and extension services for infrastructural development and transfer of technology speeded up to bring the desired technology to the region.

According to him, in protected cultivation, high value cash crops, vegetables and flowers are grown and managed under controlled conditions with higher per unit productivity and profitability. Protected cultivation has become a new agri-entrepreneurship in Himachal Pradesh with the support of the State and Central governments. Basbug & Gul (2016) have concluded that large scale enterprises yield better results in terms of economic indicators. Greenhouse cultivation is a relatively new practice in the region as it first began only in 2000s, and it is becoming a widespread production method day by day. They analyzed that overall profitability of the enterprises was satisfactory and the high profitability leads to the expansion of Greenhouse agriculture in the region. They advocated that Greenhouse cultivation promotes effective use of regional sources, increases the income of people in the region and creates employment, thus reducing migration from rural areas. It also ensures the continuity of supply for the consumer demand in vegetable sector.

Dorais & Cull (2017) have summed up that land under organic farming has increased worldwide fourfold since 1999, reaching around 43 million hectares in 2014, while organic Horticulture farming has doubled during the last decade, representing 1.33 million hectare of cultivated organic land. 45% of the total vegetable organic farm land is in Europe, followed by North America; 22%, Latin America; 18% and Asia; 12%. The five countries with the largest Organic vegetable areas are the US(59,669 ha), Mexico (46,573 ha), Poland (26,664 ha), Italy(25,930 ha) and China(22,331 ha). The world Greenhouse industry represents around 473466 ha, with a 14% increase over 2015. The total area for Greenhouse crops is estimated over 8302 hectare (1.8 % of total vegetable Greenhouse area). Punera *et al*.,(2017) through their study found substantial increase in crop production area and production of crops grown under protected structures. The floriculture in India is identified as a Sunrise industry and the government has accorded export oriented status to floriculture. The area covered under protected cultivation by the NHM has increased and benefit cost ratio, internal rate of return and pay-back period for export oriented carnation farmers have been found satisfactorily growing.

Nasrin *et al*.,(2017) have concluded that low cost poly house technology enables farmers to cultivate vegetables during off-season and also fetch higher prices to them by off-season cultivation of vegetables before or after its normal productive season. They suggest that Government and non-government agencies should take initiatives to create awareness campaigns about improved methodology, encouraging farmers to join and get motivated to learn the techniques. Wang *et al*.,(2018) have summarized that main objective of supplemental lighting is to increase the economic benefits of the grower by means of finding a trade-off between the improvement of crop yield and the electricity consumption. The results of the study have showed that compared with threshold control, dynamic control of top lighting and inter lighting can reduce electricity consumption and increase profits. It is concluded that inefficient supplemental lighting can be avoided by using these dynamic control algorithms. Sharan *et al*., (2018) have come with a conclusion that a facility for controlled environmental agriculture is under investigation at Kothara (Kutch), a hot and extremely arid region. While a Greenhouse is generally regarded as necessary to provide a warm environment in cold climates, it has also been stated that with properly designed cooling system, it is possible to improve plant growing conditions under extensively hot conditions. Further, adaptation of modern cooling technologies to Indian conditions will undoubtedly lead to increase opportunities for production of high value plants and materials in areas where the environment is extremely harsh. They argue that protected cultivation also has the potential benefit of substantially increasing plant productivity per unit water consumption, which is important in the areas where good quality water is severe. Spehia (2021) Has observed that only 223.18 hectares of area has been brought under protected cultivation in the state and significant increase in productivity was observed. It also created 4.95 lakhs man day of employment (at farmers and service provider level). Hereby giving additional income to the farmers and their families. The thrust on protected cultivation of vegetables in addition to use of better varieties ,better management practice etc have played a significant role in the productivity enhancement of cash crop in the Himachal Pradesh.

Objectives of the study

- To compute district-wise demographic statistics in relation to cropping in Himachal Pradesh
- To study Sector-wise Gross State Domestic Product of Himachal Pradesh at Current Prices
- To identify Share of Agriculture Sector in Gross Value Added of Himachal Pradesh

SCOPE AND METHODOLOGY

Based upon secondary data related to total land, cropping land area, net sown area, households, irrigated area, Gross State Domestic Product and Gross Value Added in context to the contribution of agriculture in Himachal Pradesh, the results have been drawn to identify the answers of the research problem and the related research questions.

ANALYSIS AND DISCUSSION

The foregoing table-1 regarding demographic statistics in relation to district-wise cropping in Himachal Pradesh indicates diversity of the distribution of land area of the districts as well as the disparity in terms of cropping area, net sown area, irrigated area, population and the number of holdings of the districts. In Himachal Pradesh, the population density is 123 persons per square kilometer. However, it varies widely being 406 in districts Hamirpur and just 2 in district Lahaul-Spiti. Obviously, such a wide gap in the density of population is indicative of variation in the cropping related resources and other demographic characteristics. The results indicate that one hectare cropping area is catering to 7 persons in the state. As per the district-wise analysis of population per cropping area, the study finds that in district Solan, it is 9 to 10 persons per hectare while in district Mandi, it is 6 persons per hectare. The population covered per hectare in Shimla is 9 and in Bilaspur, it is 6 to7 persons. It is pertinent to mention that every hectare of the cropping land in the State is catering to two households and this proportion is seen in the majority of the districts except Lahaul-spiti, Shimla and Kinnaur and slightly more in Kullu, Solan and Chamba districts. Needless to mention that the great majority of the land area of the State is not being used for production purposes as cropping area is just 16.7 percent of the land area.

Table 1. District-wise Demographic Statistics in Relation to Cropping of Himachal Pradesh

District	Area (hectare)	Cropping Area (hectare)	Net Area Sown (hectare)	Irrigated Area (hectare)	Population	No. of Holding	Population Density	Population covered /Cropping Area	Cropping Area / Household	Cropping Area (% of Area)	Net Sown Area (% of Cropping Area)	Irrigated Area (% of Cropping Area)	Land Area / Household
Bilaspur	116700	56010	29815	6824	3,82,056	26823	327	6.8	2.1	48.0	53.2	12.2	4.3
Chamba	652800	66825	41864	3545	5,18,844	25297	80	7.8	2.6	10.2	62.6	5.3	25.8
Hamirpur	111800	67867	34841	1734	4,54,293	32572	406	6.7	2.1	60.7	51.3	2.5	3.4
Kangra	573900	209410	116800	35687	15,07,223	93662	263	7.2	2.2	36.5	55.8	17.0	6.1
Kinnaur	640100	10091	8256	5474	84,298	1697	13	8.3	5.9	1.6	81.8	54.2	377.2
Kullu	550300	58874	36471	2679	4,37,474	20299	79	7.4	2.9	10.6	61.9	4.5	27.1
Lahaul-Spiti	1383300	3489	3397	3397	31,528	110	2	9.0	31.7	0.2	97.4	97.4	12575.4
Mandi	395100	160103	90806	12693	9,99,518	68582	253	6.2	2.3	40.5	56.7	7.9	5.8
Shimla	513100	87951	70524	2558	8,13,384	18331	159	9.2	4.8	17.1	80.2	2.9	28.0
Sirmour	282500	75316	40068	14812	5,30,164	34620	188	7.0	2.2	26.7	53.2	19.7	8.2
Solan	193600	60738	35905	9672	5,76,670	23739	298	9.5	2.5	31.4	59.1	15.9	8.1
Una	154900	75188	38809	15306	5,21,057	36166	338	6.9	2.1	48.5	51.6	20.3	4.3
Total	5567300	931862	547556	114381	68,56,509	381898	123	7.3	2.4	16.7	58.7	12.3	14.6

Source: Statistical Abstract of Himachal Pradesh, Directorate of Statistics and Economics, Shimla

Table 2. Sector-wise Gross State Domestic Product of Himachal Pradesh at Current Prices (Rs. Crore)

S.No.	Sector	Amount (Year-wise)			
		2016-17	2017-18	2018-19	2019-20
1.	Primary	18190 (14.5)	17561 (12.9)	19067 (12.5)	22,280 (13.7)
2.	Secondary	50596 (40.4)	54993 (40.3)	61884 (40.7)	64,063 (39.3)
3.	Tertiary including Transport, Communications and Trade Repair, Hotel and Restaurant Finance Services and Real Estate Community and Personal Services	48646 (38.9)	55306 (40.5)	60988 (40.2)	66,411 (40.8)
4.	Gross State Value Added at basic prices	117431 (93.8)	127860 (93.6)	141938 (93.5)	1,52,754 (93.8)
5.	Gross State Domestic Product	125122 (100)	136542 (100)	151835 (100)	1,62,816 (100)

Source: Statistical Abstract and Outline of Himachal Pradesh, Directorate of Statistics and Economics, Shimla, P-159.p.13.

Table 3. Share of Agriculture Sector in Gross Value Added of Himachal Pradesh at Current Price (in Rs. Crores)

Year	Agriculture Sector	Growth	Other Sectors	Growth	Total (H.P.)	Growth
11-12	11913 (16.4)	-	60807 (83.6)	-	72,720 (100)	-
12-13	13443 (16.2)	12.8	69377 (83.8)	14.1	82,820 (100)	13.9
13-14	15648 (16.5)	16.4	79116 (83.5)	14.0	94,764 (100)	14.4
14-15	15462 (14.9)	-1.2	88310 (85.1)	11.6	1,03,772 (100)	9.5
15-16	16377 (14.3)	5.9	97862 (85.7)	10.8	1,14,239 (100)	10.1
16-17	18190 (14.5)	11.1	107444 (85.5)	9.8	1,25,634 (100)	10.0
17-18	17561 (12.7)	-3.4	120990 (87.3)	12.6	1,38,551 (100)	10.3
18-19	19067 (12.7)	8.5	130375 (87.3)	7.7	1,49,442 (100)	7.9
19-20	22,280 (13.7)	16.8	140536 (86.3)	7.8	1,62,816 (100)	8.9
C.G.		8.4		11.0		10.6

The results indicate that usage of land for cropping is much low in the tribal regions particularly in Lahaul-Spiti (0.2 %). Lahaul-Spiti and Kinnaur are the tribal regions where population density is also very low (2 in Lahaul-Spiti and 13 in Kinnaur). On the contrary, the districts in the lower regions have higher proportion of cropping area in comparison to the other regions or districts. In this regard, Hamirpur has 60.7 percent cropping area of its total land area and Una and Bilaspur have 48.5 and 40.0 percent cropping area respectively of their land area. Unfortunately, the cropping area is not being sown fully which is a de-motivating factor to develop agriculture in connection to employability as only 58.7 percent of the cropping area is the net sown area except the regions which are having low cropping area like Lahaul-Spiti, Kinnaur and Shimla having Net Sown area more than 80 percent of their cropping area. The precarious situation does not end with the result that the Net Sown area is very low in comparison to the cropping area, it adds with the finding that the irrigated area is just 12.3 percent of the cropping area. Further, percentage of irrigated area is less than 20 percent of the cropping area in the districts except Lahaul-Spiti (97.4 %) and Kinnaur (54.2%). The study finds that each hectare in the State has been used in average by 14 to 15 households. However, the average number of households in the districts is less than 10 per hectare of total land area of the State except Lahaul-Spiti, Shimla, Kinnaur, Kullu and Chamba districts.

Based upon the data given in the reports for the years 2016-17 to 2019-20 it is evident that primary sector has contributed between 12 tom 14.5 percent of the Gross State Domestic Product of Himachal Pradesh. The results have revealed that the Gross State Value Added accounts for 93 to 94 percent of the Gross State Domestic Product of Himachal Pradesh. Data further indicates that the secondary sectors as well as the tertiary sector have contributed almost equally having a major stake in the Gross State Domestic Product. Agriculture sector being the purveyor of the great majority of population having 75.3 percent of the land area available for cultivation, is still able to contribute only to 12 to 14 percent of the State Gross Domestic Product which still pays attention to search for the reasons behind it especially despite of the fact that the state has peculiarity and known for production of the commercial horticultural and agricultural crops. With the objective to examine the level of consistency in the trend of growth in the share of agriculture sector in relation to the Gross Value Added of Himachal Pradesh since 2011-12 and also to study the year-wise contribution of agriculture sector, growth trends and ratios have been applied on Gross Value Added at current prices as per the above table. As stated earlier while analyzing the sector-wise contribution in Gross State Domestic Product that the primary sector is contributing 12 to 14.5 percent, in order to examine the status of consistency in contribution of this sector, data computed since 2011-12 to 2019-20 envisages that on an average during this period of nine years, contribution of agriculture sector in Gross Value Added in Himachal Pradesh at current prices has grown by 8.4 percent against the contribution of other sectors grown by 11 percent. The study analyzes that the Gross Value Added in Himachal Pradesh has grown by 10.6 percent during the same period which implies that the growth in contribution of the agriculture sector is comparatively low. It compels to concentrate upon searching ways for better exploration of the agriculture, better use of cultivable land, development of agricultural infrastructure and facilities and to encourage resources as this is the only sector which can boost-up wide majority of the population even belonging to the lowest strata of the society as everyone is having landholding. As shown in the table, share of agriculture sector in the Gross Value Added did not remain consistent and it has recorded decline also. Initially, the contribution of agriculture sector in the Gross Value Added of Himachal Pradesh was around 16.5 percent which declined to 12.7 percent in the later years. Moreover, the extent of growth in the contribution of agriculture in Gross Value Added of Himachal Pradesh has shoot-up and touched to 16.8 percent in 2019-20 from the preceding year being maximum whereas, Gross Value Added of Himachal Pradesh has grown maximum by 14.4 percent in the year 2013-14 from the preceding year.

Findings and Suggestions

On the basis of the analysis drawn in the present research it has been found that cultivable area is substantial as per 123 density of population in Himachal Pradesh despite of topographical barriers. However, cropping land area is very limited which indicates that in a state where literacy rate is very high and is being placed amongst one of the developed states of the country, still involvement of people in the agricultural sector is very low. It is pertinent that the great majority of the population belongs to the rural background and having land holdings. It is also obvious that the agricultural sector is the pertinent source of employment but is not being preferred by people as per the cropping land area and contribution of agriculture sector in the State Gross Domestic Product and Gross Value Added which is less than 16 percent. Further, initiatives regarding facilitation of irrigation and infrastructure are not substantial. All such reasons are found to be responsible for low pace of growth as young people may not feel safe to indulge in employable activities of this sector keeping it in view, the following measures are recommended:

- On the part of Government, there is a need to pay special attention to facilitate irrigation to the landholdings in a revolutionary and extreme basis.

- The Government needs to direct professionals and experts to go into the field and in the educational institutions of higher learning, interact with people and make them aware about the different schemes meant for seeking funds and involve in agricultural activities as a profession or occupation for employment.
- The innovative schemes like greenhouse cultivation, use of mechanized systems of cultivation and new systems of high yield as per properties of soil and the benefits related with them need to be propagated and conveyed so that young people enthusiastically indulge and follow this sector as their occupation.

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